FIRE ALARM GENERAL NOTES

1. PRIOR TO BID COORDINATE SCOPE OF WORK REQUIRED WITHIN BUILDING FIRE ALARM SYSTEM (RE–PROGRAMMING, EXPANSION BOARDS, EXPANDER PANEL, POWER SUPPLY, WITH BUILDING F.A. VENDOR ALL COMPONENTS REQUIRED TO MAKE SYSTEM WORKABLE SHALL BE INCLUDED IN BID PRICE. VERIFY AVAILABILITY OF INPUT/OUTPUT POINTS.
2. ALL DEVICES WIRED TO FA SUB PANELS SHALL BE COMPATIBLE WITH BASE BUILDING SYSTEM. COORDINATE WITH BUILDING FIRE ALARM VENDOR. ALL EQUIPMENT SHALL BE COMPATIBLE WITH BASE BUILDING SYSTEM AND UL LISTED AND IN COMPLIANCE WITH ADA REQUIREMENTS.
3. EACH FA RELAY SHALL HAVE MINIMUM OF THREE SETS OF CONTACT 10A RATED @ 120V.(TYPICAL)
4. ALL STROBES, & HORN/STROBE SHALL BE FLUSH WALL MOUNTED FINISH 'WHITE', AS APPROVED. COORDINATE WITH ARCHITECT.
5. FOR WALL MOUNTED F.A. DEVICES PROVIDE 3/4" CONDUIT TERMINATED IN NEAREST ACCESSIBLE CEILING. 6. COORDINATE WIRING DIAGRAM WITH FIRE ALARM VENDOR SHOP DRAWINGS, FOR STROBES MAXIMUM CURRENT PER ZONE SHALL NOT EXCEED 1.5A. ZONES FOR STROBES & STROBE/STROBES AS PER FIRE ALARM VENDOR SHOP DRAWINGS.(TYPICAL)
6. ALL FIRE ALARM WIRING SHALL BE TEFLON "RED" APPROVED
7. WIRING INSTALLED IN NON ACCESSIBLE CEILING OR IN MECHANICAL ROOMS AREA (NO CEILING) ROUTE IN CONDUIT.
8. THIS RISER DIAGRAM IS A SCHEMATIC REPRESENTATION OF THE FIRE ALARM SYSTEM. REFER TO FLOOR PLANS AND RISER DIAGRAM FOR EXACT QUANTITY OF DEVICES. WHERE THERE ARE DISCREPANCIES BETWEEN THE PLANS AND RISER, THE GREATER QUANTITY SHALL BE USED.
9. ALL FSD TO BE WIRED TO FIRE ALARM SYSTEM VIA CONTROL RELAYS, IF REQUIRED.
10. ALL FSD SHALL HAVE AN ASSOCIATED DUCT MOUNTED SMOKE DETECTOR, IF REQUIRED.
11. PARTIAL RISER IS DIAGRAMMATIC AND FOR INTENT ONLY. PRIOR TO BID SUBMISSION COORDINATE WITH BUILDING FIRE ALARM VENDOR FOR THE FOLLOWING: SCOPE OF WORK TO BE PERFORMED BY THE FIRE ALARM VENDOR AND THE ELECTRICAL CONTRACTOR. EXACT LOCATION OF EXISTING TENANT FACP, TERMINAL BOXES ETC. SCOPE OF WORK TO BE PERFORMED WITHIN BASE BUILDING SYSTEM AS REQUIRED TO ACCOMODATE ADDED DEVICES. NEW EXPANSION BOARDS, TERMINAL BOXES, STROBE POWER SUPPLY, REPROGRAMMING ETC). THE VENDORS COST OF THE UPGRADING SHALL BE INCLUDED IN BID PROPOSAL.
12. PROVIDE ADDITIONAL STROBE POWER SUPPLIES AND SYNCHRONIZING HARDWARE FOR NEW STROBES.
13. PROVIDE NEW END OF LINE RESISTORS AND RECONNECT TO NEW DEVICES. PROVIDE NEW AS REQUIRED.
14. CONTRACTOR SHALL VERIFY ALL WIRING WITH BASE BUILDING FIRE ALARM VENDOR AND OBTAIN WIRING DIAGRAMS BEFORE PROCEEDING WITH THE START OF ANY WORK.
15. DO NOT SPLICE FIRE ALARM CONDUCTORS. IF EXISTING WIRING IS NOT LONG ENOUGH TO REACH NEW LOCATION PULL NEW WIRE OR PROVIDE NEW CONDUIT AND WIRING TO SUIT FIELD CONDITIONS.
16. FINAL CONNECTIONS ARE TO BE DONE BY ELECTRICAL CONTRACTOR UNDER THE SUPERVISION OF BASE BUILDING FIRE ALARM VENDOR. PROVIDE ADEQUATE SLACK FOR TERMINATIONS.
17. EXISTING BUILDING SYSTEMS NOT SHOWN (UNLESS A PART OF ONE INSTALLATION) SHALL REMAIN INTACT. DO NOT REMOVE EXISTING BASE BUILDING FIRE ALARM DEVICES UNLESS SPECIFICALLY DIRECTED. RE– INSTALL ALL EXISTING FIRE ALARM EQUIPMENT, WHICH IS TO REMAIN IF REMOVED FOR INSTALLATION OF NEW CEILING OR DUE TO DEMOLITION. ELECTRICAL CONTRACTOR SHALL PROVIDE NEW CABLES TO ALL EXISTING FIRE ALARM EQUIPMENT THAT IS RELOCATED. COORDINATE EXISTING WORK WITH EXISTING BUILDING FIRE ALARM SYSTEMS. THE CONTRACTOR SHALL VERIFY THAT ANY MODIFICATIONS TO EXISTING SYSTEMS ARE COMPLETED AND IN WORKING ORDER.
18. PROVIDE ALL REQUIRED POWER SUPPLIES, BATTERIES, FUSE CUTOUTS AND BRANCH CIRCUITS, ETC, FOR A COMPLETE AND OPERATION FIRE ALARM SYSTEM.
19. HORNS AND STROBES SHALL BE WIRED ON ALTERNATING A–B CIRCUITING IN ALL AREAS.
20. DURING THE INSTALLATION, THE EXISTING FIRE ALARM SYSTEM MUST REMAIN OPERATIONAL. WHEN NOT OPERATIONAL, A CERTIFIED FIRE WATCH MUST BE PROVIDED BY CONTRACTOR.
21. COORDINATE ALL DEVICES AND CONNECTIONS WITH FIRE ALARM VENDOR
22. COORDINATE ALL REQUIRED TIES AND DEVICES WITH BUILDING FIRE ALARM VENDOR.
23. E.C. TO REMOVE ALL EXISTING FA DEVICES/WIRING BACK TO SOURCE, WHICH ARE NO LONGER REQUIRED AS PART OF FINAL BUILD OUT. PATCH WALLS AND CEILINGS AS REQUIRED.
24. CONTRACTOR SHALL PERFORM ALL ELLISVILLE FIRE DEPARTMENT FILINGS AND OBTAIN ALL APPROVALS. CONTRACTOR SHALL OBTAIN ALL REQUIRED SIGNED & SEALED ELLISVILLE FIRE DEPARTMENT FORMS AND REQUIRED SETS OF DRAWINGS FROM ENGINEER OF RECORD AND BUILDING DEPT. EXPEDITOR.
25. FIRE ALARM DESIGN HAS BEEN DONE AS PER 2018 MISSOURI BUILDING CODE, 2016 MISSOURI FIRE ALARM CODE. (NFPA 72–2016) WITH THE CURRENT APPLICABLE AMENDMENTS.
26. FIRE SAFETY FUNCTION, INITIATING DEVICES, OCCUPANT NOTIFICATION SYSTEMS, INSTALLATION & MONITORING, ACCEPTANCE TESTS COMPLETION AND INSPECTION TESTING AND MAINTENANCE SHALL BE AS PER SECTION 907.3 THROUGH 907.8 OF 2018 MISSOURI BUILDING CODE (IBC) RESPECTIVELY.
27. ALL WIRING SHALL BE IN ACCORDANCE WITH THE ARTICLE 760 OF THE 2014 MISSOURI ELECTRIC CODE.

FIRE ALARM SPECIFICATIONS

1. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE FIRE ALARM SYSTEM INSTALLATION. SYSTEM SHALL COMPLY WITH ALL CURRENT APPLICABLE CODES, INCLUDING LOCAL LAWS AND PER AUTHORITY HAVING JURISDICTION FIRE ALARM INSTALLATION SHALL CONFORM TO BUILDING STANDARDS. COORDINATE ALL WORK WITH BUILDING MANAGEMENT, BASE BUILDING FIRE ALARM SYSTEM VENDOR AND OTHER TRADES.
2. CONTRACTOR SHALL SUBMIT FIVE COPIES OF WIRING DIAGRAMS AND CATALOG CUTS FOR ALL FIRE ALARM WORK FOR REVIEW PRIOR TO THE START OF ANY WORK.
3. FIRE ALARM DEVICES INSTALLATION:
   - A. PROVIDE FIRE ALARM SMOKE DETECTOR, STROBE LIGHT HORNS UNIT AND OTHER DEVICES AS INDICATED ON THE PLAN. EXACT LOCATION OF DEVICES SHALL BE COORDINATED WITH ARCHITECTS AND FIELD CONDITIONS.
   - B. FIRE ALARM STROBE AND COMBINATION HORN/STROBE SHALL BE SIMILAR TO BASE BUILDING SYSTEM TYPE. STROBE LIGHTS SHALL MATCH BASE BUILDING SYSTEM CAPABLE OF DELIVERING 100,000 PEAK CANDLE POWER, 24/12 VDC, 90 MA AND SYNCHRONIZED TYPE.
     - 1) THE LAMP SHALL BE A XENON STROBE TYPE.
     - 2) THE LENS SHALL BE UNFILTERED OR CLEAR FILTERED WHITE LIGHT.
     - 3) THE MAXIMUM PULSE DURATION SHALL BE TWO–TENTHS OF ONE SECOND (0.2 SEC) WITH A MAXIMUM DUTY CYCLE OF 40 PERCENT. THE PULSE DURATION IS DEFINED AS THE TIME INTERVAL BETWEEN INITIAL AND FINAL POINTS OF 10 PERCENT OF MAXIMUM SIGNAL.
     - 4) THE INTENSITY SHALL BE PER PLANS. AS REQUIRED BY AHJ.
     - 5) THE FLASH RATE SHALL BE A MINIMUM OF 1 HZ AND A MAXIMUM OF 2HZ.
     - 6) THE STROBE SHALL BE WALL MOUNTED 80 INCHES ABOVE THE HIGHEST FLOOR LEVEL WITHIN THE SPACE, OR 6 INCHES BELOW THE CEILING, WHICHEVER IS LOWER.
   - C. BASE BUILDING FIRE ALARM VENDOR, SHALL MAKE FINAL CONNECTIONS, MODIFICATIONS TO AND REPROGRAMMING OF THE FIRE COMMAND STATION.
   - F. ALL EXISTING DEVICES WILL BE REINSTALLED IN THEIR ORIGINAL LOCATIONS OR AS NOTED ON PLAN AFTER NEW CEILING IS IN PLACE AND WALL FINISHES ARE COMPLETE. PROVIDE TEMPORARY SUPPORT FOR DEVICES AND KEEP OPERATIONAL DURING CONSTRUCTION.
   - G. AS A MINIMUM, PROVIDE NO. 16 AWG. TWISTED, SHIELDED MULTI–CONDUCTOR CABLE FOR HORNS CIRCUIT AND NO. 14 AWG. MULTI–CONDUCTOR CABLE FOR STROBE LIGHT CIRCUIT. EXTEND SYSTEM ZONE OR ADDRESSABLE CIRCUITS WITH TYPE AND SIZE MATCHING THE EXISTING SYSTEM. ALL CABLES SHALL BE TYPE 'FPLP' HAVING 200° AND COMPLY WITH FIRE DEPARTMENT REQUIREMENTS. CABLE SIZE AND CONFIGURATION (SHIELDED/NON) SHALL MATCH EXISTING.
4. PERMITS, STANDARDS AND APPROVALS:
   - A. ALL ROUTING AND TERMINATIONS OF CABLES SHALL BE DIRECTED AND APPROVED BY BUILDING MANAGEMENT. NO TERMINATIONS SHALL BE MADE WITHOUT PRIOR APPROVAL OF BUILDING MANAGEMENT.
   - B. ELECTRICAL CONTRACTOR SHALL INCLUDE ALL FEES, COSTS, ETC. FOR FILING, APPROVALS, FINAL CONNECTIONS, SYSTEM REPROGRAMMING, PRE–TESTING AND FIRE DEPARTMENT TESTING AND SIGNOFF.

TYPE OF DESIGN

INSTALLATION OF AUTOMATIC FIRE ALARM SYSTEM WITH SPRINKLER SYSTEM

FIRE ALARM DRAWING LIST

S.No.	SHEET NUMBER	SHEET DETAIL
1	FA100	FIRE ALARM GENERAL NOTES AND RISER DIAGRAM
2	FA200	FIRST FLOOR FIRE ALARM PLAN

BUILDING DATA

TYPE OF WORK	RENOVATION
BUILDING OCCUPANCY	BUSINESS (B)
FIRE DEPARTMENT ACCESS	1st FLOOR
FA SYSTEM FEATURE	NON–VOICE EVACUATION
TOTAL NUMBER OF LEVELS	1
ABOVE GROUND LEVELS	1
BELOW GROUND LEVELS	1
SCOPE OF WORK	1st FLOOR
FULLY SPRINKLERED	YES

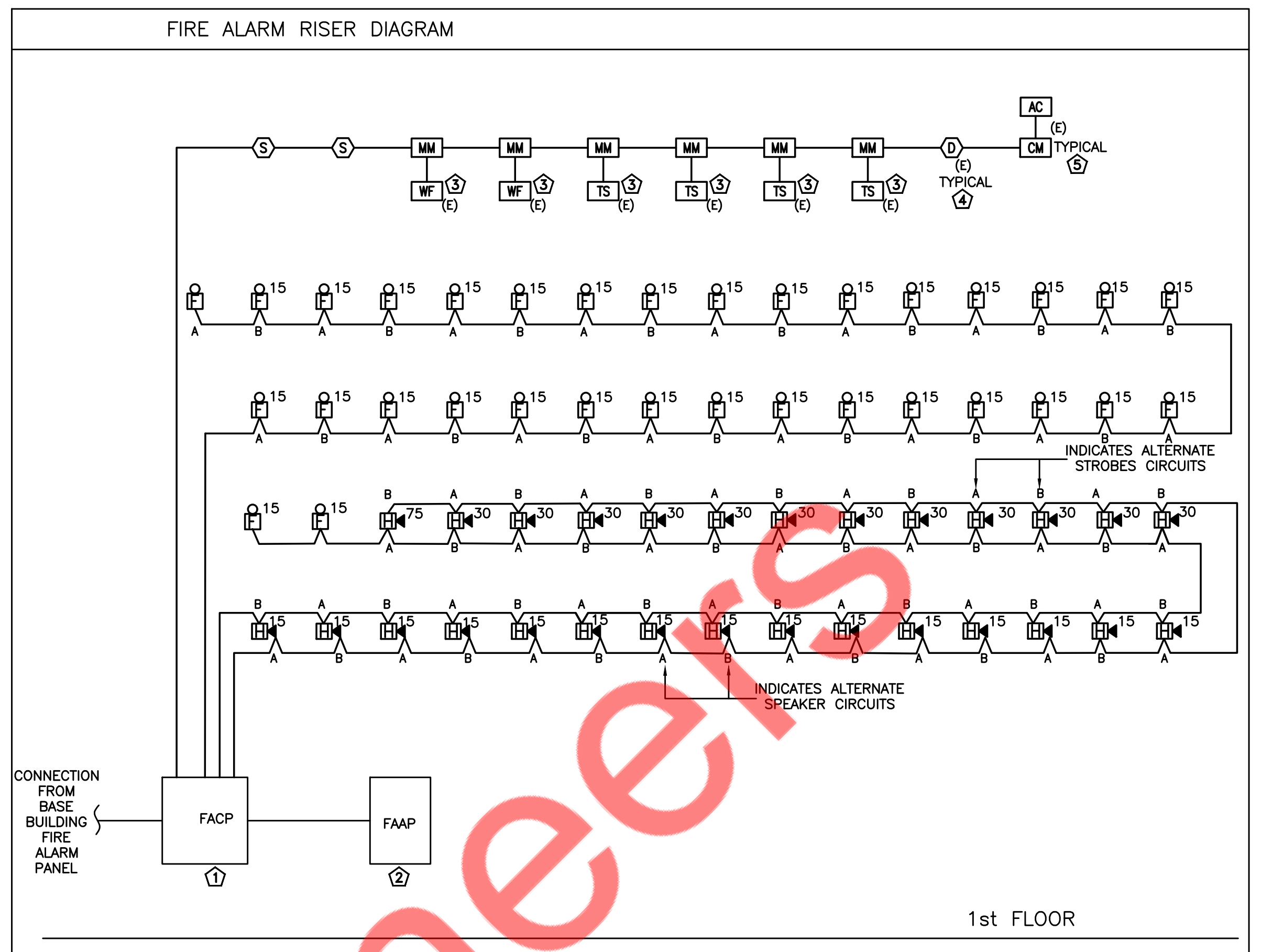
FIRE ALARM SYMBOL LIST

SYMBOL	DESCRIPTION
F	STROBE LIGHT, WALL MOUNTED (80" AFF), 15cd OR AS INDICATED
H	WALL MOUNTED HORN/STROBE COMBINATION DEVICE (80" AFF) 15cd OR AS INDICATED.
S	CEILING MOUNTED AREA SMOKE DETECTOR
D	DUCT SMOKE DETECTOR
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL
——	SOLID THICK LINE INDICATES NEW DEVICE OR WIRING
– – – –	DOTTED LINE INDICATES EXISTING DEVICE OR WIRING
CM	CONTROL MODULE
MM	MONITORING MODULE
WF	WATER FLOW SWITCH
TS	TAMPER SWITCH

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
C	CONDUIT
E	EXISTING
EMT	ELECTRIC METALLIC TUBING
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATION PANEL
FACP	FIRE ALARM CONTROL PANEL
G	GROUND
N	NEW
NTS	NOT TO SCALE
RE	RELOCATED EXISTING
UON	UNLESS OTHERWISE NOTED
AC	AIR CONDITIONING
WF	WATER FLOW SWITCH
TS	TAMPER SWITCH

FIRE ALARM RISER DIAGRAM



FIRE ALARM RISER DIAGRAM GENERAL NOTES:

- A. ALL COMPONENTS REQUIRED TO MAKE SYSTEM WORKABLE SHALL BE INCLUDED IN BID PRICE.
- B. COORDINATE WIRING DIAGRAM WITH FIRE ALARM VENDOR SHOP DRAWINGS. FOR STROBES MAXIMUM CURRENT PER ZONE SHALL NOT EXCEED 1.5A. ZONES FOR STROBES & STROBE/HORNS AS PER FIRE ALARM VENDOR SHOP DRAWINGS (TYPICAL).
- C. ALL FIRE ALARM WIRING SHALL BE INSTALLED IN CONDUIT WHERE REQUIRED BY NEC–2014, ARTICLE 760.130.
- D. THIS RISER DIAGRAM IS A SCHEMATIC REPRESENTATION OF THE FIRE ALARM SYSTEM. ALL WIRING SHALL BE AS PER APPROVED MANUFACTURER SHOP DRAWINGS.
- E. ALL FIRE ALARM CONDUITS SHALL BE MINIMUM ¾".
- F. CONTRACTOR SHALL PROVIDE ISOLATOR MODULES AND OTHER FIRE ALARM DEVICES AS REQUIRED FOR THE PROPER FUNCTIONING OF THE FIRE ALARM SYSTEM IN COORDINATION WITH THE FIRE ALARM VENDOR. BASE BID ACCORDINGLY.

FIRE ALARM RISER DIAGRAM KEYED NOTES:

1. NEW FIRE ALARM CONTROL PANEL IS PROVIDED IN THE ELECTRICAL ROOM (INDICATED ON FIRE ALARM PLAN). E.C. SHALL COORDINATE WITH THE ARCHITECT/OWNER FOR EXACT LOCATION.
2. PROVIDE NEW FIRE ALARM ANNUNCIATION PANEL WITH IN 5' OF THE ENTRY GATE IN THE TENANT SPACE PER CODE.
3. CONTRACTOR SHALL VERIFY THE QUANTITY OF THE EXISTING WATER FLOW SWITCH AND TAMPER SWITCH IN THE FIELD AND CONNECT TO THE FACP AS REQUIRED. BASE BID ACCORDINGLY.
4. CONTRACTOR SHALL VERIFY THE QUANTITY OF THE EXISTING DUCT SMOKE DETECTOR IN THE FIELD AND CONNECT TO THE FACP AS REQUIRED. BASE BID ACCORDINGLY
5. CONTRACTOR SHALL VERIFY THE QUANTITY OF THE EXISTING AC UNITS IN THE FIELD AND CONNECT TO THE FACP AS REQUIRED. BASE BID ACCORDINGLY

FIRE ALARM INPUT OUTPUT MATRIX

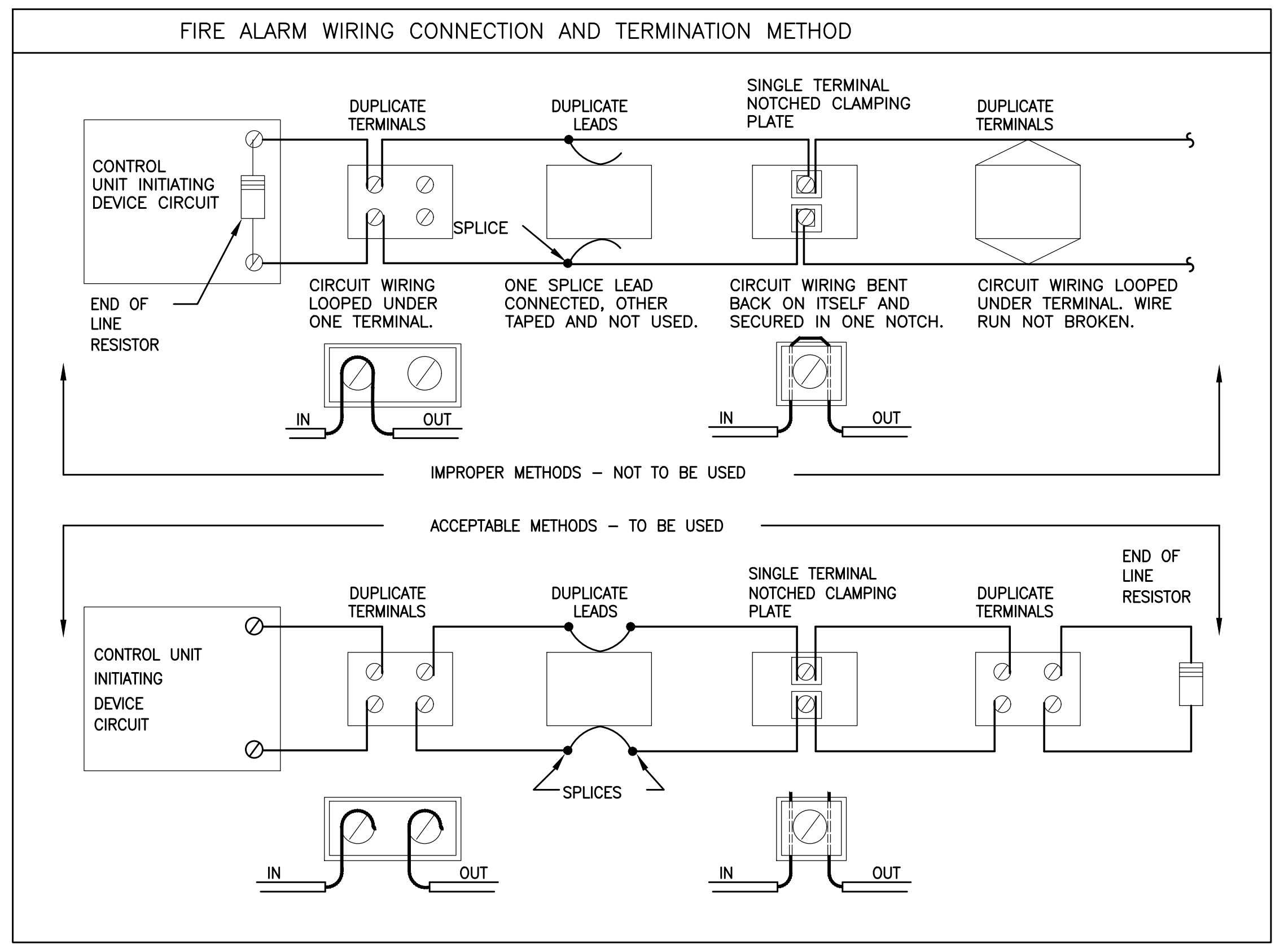
SYSTEM OUTPUTS / INDICATING/CONTROLLED DEVICES / SYSTEM INPUTS INITIATING DEVICES	CONTROL UNIT ANNUNCIATION					NOTIFICATION				SAFETY CONTROL
	ACTIVATE COMMON ALARM SIGNAL INDICATOR ON LCD OF FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR ON LCD OF FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS.	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR ON LCD OF FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS.	SOUND INTERNAL BUZZER AT FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS.	TEXT MESSAGE DISPLAY DEVICE TYPE & LOCATION OF THE ACTIVATING DEVICES ON LCD OF FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS.	TRANSMIT SMOKE ALARM SIGNAL TO FIRE DEPARTMENT VIA BASE BUILDING PANEL	TRANSMIT "WATERFLOW" ALARM SIGNAL TO FIRE DEPARTMENT VIA AN APPROVED CENTRAL STATION MONITORING COMPANY.	TRANSMIT "SUPERVISORY" ALARM SIGNAL TO FIRE DEPARTMENT VIA AN APPROVED CENTRAL STATION MONITORING COMPANY.	TRANSMIT "TROUBLE" ALARM SIGNAL TO FIRE DEPARTMENT VIA AN APPROVED CENTRAL STATION MONITORING COMPANY.	INITIATE THE AUTOMATIC FIRE MODE CONDITIONS FOR FAN (AC UNIT)OPERATION. PROCEED AC UNIT SHUTDOWN SEQUENCE. (IF COMPATIBLE)
AREA SMOKE DETECTOR	●			●	●	●				●
WATER FLOW SWITCH	●			●	●		●			●
FIRE ALARM AC POWER FAILURE			●	●	●				●	
FIRE ALARM SYSTEM LOW BATTERY			●	●	●				●	
OPEN CIRCUIT			●	●	●				●	
GROUND CIRCUIT			●	●	●				●	
NOTIFICATION APPLIANCE CIRCUIT SHORT			●	●	●				●	
BASE BUILDING FACP	●			●	●	●				●
DUCT SMOKE DETECTOR **	●			●	●					●
SPRINKLER CONTROL VALVE/ TAMPER SWITCH		●		●	●			●		

FIRE ALARM INPUT OUTPUT MATRIX NOTE:

CONTRACTOR SHALL ENSURE AVAILABILITY OF ALL THE DEVICES SHOWN IN THE MATRIX AND PROVIDE THE CONNECTION TO, AND PROGRAM THE FACP ACCORDINGLY SO AS TO RESPOND IN THE SAME WAY AS IT HAS BEEN INDICATED IN THE MATRIX.

** DUCT SMOKE DETECTORS SHALL COMPLY WITH THE SECTION 907.3.1 OF THE 2018 MISSOURI BUILDING CODE.

FIRE ALARM WIRING CONNECTION AND TERMINATION METHOD



Issued / Revised
No. Date Description

WOODHOUSE™
SPA

FIRE ALARM NOTES &
RISER DIAGRAM

FA100

FIRE ALARM GENERAL NOTES

A. MCP (MANUAL CALL POINT) SHALL NOT BE REQUIRED AS PER EXCEPTION SPECIFIED IN THE SECTION 907.2.2 OF 2018 MISSOURI BUILDING CODE. IF IT IS REQUIRED AS PER LOCAL AHJ REQUIREMENTS. CONTRACTOR SHALL PROVIDE IN THE SITE. BASE BID ACCORDINGLY.

B. AVERAGE SOUND PRESSURE FOR HORN SHALL MATCH WITH SECTION 907.5.2.1.1 OF 2018 MISSOURI BUILDING CODE. AND AS PER LOCAL AHJ REQUIREMENTS. BASE BID ACCORDINGLY

C. THE CANDELA LEVELS SPECIFIED ON THE PLANS IS FOR REFERENCE PURPOSE ONLY. ACTUAL CANDELA REQUIREMENT SHALL BE AS PER LOCAL AHJ. BASE BID ACCORDINGLY.

D. DUCT DETECTOR REQUIREMENT SHALL BE COORDINATED AS PER THE MECHANICAL EQUIPMENT REQUIREMENTS. CONNECT THE DUCT DETECTORS TO THE FIRE ALARM CONTROL PANEL AS REQUIRED, VERIFY PRIOR TO BID IN COORDINATION WITH MECHANICAL CONTRACTOR/ OWNER. BASE BID ACCORDINGLY.

E. CONTROL MODULE REQUIREMENTS SHALL BE COORDINATED AS PER THE MECHANICAL EQUIPMENT REQUIREMENTS. CONNECT THE CONTROL MODULE TO THE FIRE ALARM CONTROL PANEL AS REQUIRED, VERIFY PRIOR TO BID IN COORDINATION WITH MECHANICAL CONTRACTOR/ OWNER. BASE BID ACCORDINGLY.

F. FSDs QUANTITY AND REQUIREMENT SHALL BE COORDINATED AS PER MECHANICAL EQUIPMENT REQUIREMENTS. CONNECT THE FSDs TO THE FIRE ALARM CONTROL PANEL AS REQUIRED, VERIFY PRIOR TO BID IN COORDINATION WITH MECHANICAL CONTRACTOR/ OWNER. BASE BID ACCORDINGLY.

FIRE ALARM DRAWING KEYED NOTES

1. PROVIDE NEW FACP PANEL. E.C SHALL COORDINATE WITH ARCHITECT FOR THE EXACT LOCATION OF FACP PANEL IN FIELD.
2. E.C SHALL PROVIDE A FAAP NEAR ENTRY DOOR WITHIN 5' PER NFPA 72. FAAP SHALL BE MOUNTED WITH REQUIRED SUPPORT AS THERE IS GLASS WALL. COORDINATE WITH ARCHITECT FOR EXACT MOUNTING REQUIREMENTS. BASE BID ACCORDINGLY.
3. E.C SHALL PROVIDE MONITORING MODULE TO EXISTING WATER FLOW SWITCHES AND TAMPER SWITCHES. E.C TO COORDINATE EXACT QUANTITY AND LOCATION WITH PLUMBING CONTRACTOR/OWNER ON FIELD BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.

FIRE ALARM PLAN
3/16" = 1'-0"

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No. Date Description

WOODHOUSE™
SPA

FIRST FLOOR -
FIRE ALARM PLAN

FA200

GENERAL NOTES:

1. ALL SPRINKLER WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF N.F.P.A.–13 AND ALL LOCAL AUTHORITIES.
2. CONTRACTOR SHALL FIELD VERIFY EXACT ELEVATION, LOCATION AND PIPE SIZES OF EXISTING SPRINKLER HEADS AND PIPING BEFORE INSTALLATION OF NEW WORK. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND SHALL INSTALL NEW WORK TO CLEAR DUCTWORK AND LIGHTING FIXTURES.
3. ALL SPRINKLER WORK SHALL COMPLY WITH BUILDING STANDARDS AND REQUIREMENTS.
4. ALL SPRINKLER HEADS SHALL BE INSTALLED AT CENTER OF TILE IF CEILING IS PROVIDED.
5. THE SPRINKLER SYSTEMS ARE TO BE HYDROSTATIC TESTED FOR 2 HOUR MINIMUM AT 200 PSI AS PER NFPA 13. PORTIONS OF SYSTEMS NORMALLY SUBJECTED TO SYSTEM WORKING PRESSURES IN EXCESS OF 150 PSI SHALL BE TESTED AT A PRESSURE OF 50 PSI IN EXCESS OF SYSTEM WORKING PRESSURE. PRESSURE ARE TO BE WITNESSED BY AUTHORIZED BUILDING PERSONNEL. COORDINATE ALL TESTING WITH BUILDING MANAGER.
6. DRAWING INDICATES SPRINKLER SYSTEM DESIGN ONLY. CONTRACTOR RESPONSIBLE FOR OFFSETS, DROPS AND RISES FOR COORDINATION WITH OTHER TRADES.
7. G.C. SHALL COORDINATE AND ARRANGE FOR DRAINING AND DEACTIVATION OF EXISTING SPRINKLER SYSTEM WITH BUILDING MANAGEMENT AS REQUIRED.
8. G.C. SHALL BE RESPONSIBLE FOR ALL FINAL TESTS AND INSPECTIONS OF COMPLETED WORK REQUIRED BY THE BUILDING MANAGEMENT PRIOR TO OCCUPANCY OF SPACE.
9. ALL SPRINKLER WORK SHALL BE TESTED AND MADE OPERATIONAL PRIOR TO CARPET AND FURNITURE INSTALLATION. G.C. SHALL REPAIR AND/OR REPLACE ALL FINISHES DAMAGED BY DEFECTIVE SPRINKLER WORK AT HIS EXPENSE.
10. G.C. SHALL PROPERLY TEST AND INSPECT EXISTING SPRINKLER SYSTEM PRIOR TO COMMENCEMENT OF WORK AND SHALL NOTIFY BUILDING MANAGEMENT IMMEDIATELY IF REPAIR OF EXISTING SPRINKLER SYSTEM IS REQUIRED.
11. ALL BURNING, CUTTING, SOLDERING AND WELDING SHALL BE COORDINATED WITH BUILDING FIRE SYSTEMS WITH BUILDING MANAGEMENT, AS REQUIRED.
12. G.C. SHALL COORDINATE ARRANGEMENTS FOR TEMPORARY DISCONNECT AND RECONNECT WITH MANAGEMENT PRIOR TO COMMENCEMENT OF WORK.
13. G.C. SHALL BE RESPONSIBLE FOR OBTAINING PERMITS AND APPROVALS REQUIRED BY BUILDING INSPECTOR AND FIRE MARSHALL IN CONJUNCTION WITH CHANGES TO EXISTING SPRINKLER SYSTEM.
14. REFER TO ENGINEERING DRAWINGS FOR SPRINKLER HEADS, LIGHT SENSORS AND FIRE DETECTION DEVICES.
15. ALL SERVICE SHUTDOWNS SHALL BE BY BASE BUILDING ENGINEERS. MINIMUM OF 48 HOURS NOTICE IS REQUIRED TO THE BUILDING OFFICE PRIOR TO SHUT DOWN.
16. ALL WORK TO BE DONE DURING THE HOURS DESIGNATED BY OWNER.
17. UPON COMPLETION OF ALL SPRINKLER WORK, CONTRACTOR SHALL TEST AND INSPECT ENTIRE SPRINKLER SYSTEM. ENTIRE SYSTEM SHALL BE FULLY OPERATIONAL AND APPROVED IN COMPLIANCE WITH ALL AHJ.
18. UPON SUCCESSFUL COMPLETION OF ALL TESTING, CONTRACTOR SHALL PRIME AND PAINT ALL EXPOSED SPRINKLER PIPING. COLOR AND FINISH SHALL BE AS PER ARCHITECT.
19. CONTRACTOR SHALL INCLUDE IN HIS BID THE COST TO PROVIDE (5) FIVE ADDITIONAL SPRINKLERS INSTALLED. EXACT LOCATIONS OF THESE SPRINKLER HEADS SHALL BE DETERMINED IN FIELD.
20. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND SHALL INSTALL NEW WORK TO CLEAR DUCTWORK AND LIGHTING FIXTURES.
21. ALL SPRINKLER WORK SHALL COMPLY WITH BUILDING STANDARDS AND REQUIREMENTS.
22. PIPES SIZES SHOWN ARE BASED ON SCHEDULE OF PIPE SIZE PIPING LAYOUTS ONLY. ACTUAL PIPE SIZES SHALL BE DETERMINED BY CONTRACTORS HYDRAULIC CALCULATIONS BASED ON HIS INSTALLATION DRAWINGS. CONTRACTOR SHALL ALLOW FOR THIS AND INCLUDE THIS IN HIS CONTRACT PRICE.
23. PROVIDE AUXILIARY DRAINS AT TRAPPED SECTIONS OF PIPING AS REQUIRED BY NFPA–13.
24. GENERAL CONTRACTOR SHALL COORDINATE FINAL FURNITURE/ EQUIPMENT HEIGHT ELEVATIONS AND LOCATIONS WITH SPRINKLER INSTALLATION. ENGINEER SHALL BE NOTIFIED WHEN FURNITURE/EQUIPMENT IS LESS THAN 18" TO UNDERSIDE OF CEILING PRIOR TO INSTALLATION.
25. COMPOSITE DRAWINGS

    CONTRACTOR SHALL BE GIVEN A SEPIA TRANSPARENCIES TO IMPOSE THEIR WORK FOR A COORDINATED ALLOCATION OF SPACE. PROCEDURE SHALL INCLUDE HVAC CONTRACTOR TO INDICATE DUCT WORK, PIPING, STRUCTURAL AND ARCHITECTURAL DETAILS. SEPIAS SHALL BE GIVEN TO PLUMBING, SPRINKLER AND ELECTRICAL TRADES WHO WILL DRAW HIS WORK ON DRAWINGS. HVAC CONTRACTORS SHALL HOLD A COORDINATION MEETING WITH ALL CONTRACTORS TO ELIMINATE INTERFERENCE OR CONFLICTS IN INSTALLING WORK. IF UNABLE TO EACH AGREEMENT ISSUE, ARCHITECT SHALL MAKE BINDING DECISION.
26. CONTRACTOR SHALL COORDINATE SPRINKLER MAIN AND BRANCHES WITH NEW CONSTRUCTION TO AVOID CONFLICTS WITH CEILING HEIGHTS, DUCTWORK, LIGHTING FIXTURES, BEAMS. CONTRACTOR TO ADJUST PIPING ACCORDINGLY TO ACCOMMODATE NEW CONSTRUCTION.

SPRINKLER DEMOLITION NOTES:

1. CONTRACTOR TO COORDINATE WITH ARCHITECTURE FOR DEMOLITION SCOPE OF WORK BEFORE BID.
2. SCOPE OF WORK UNDER THIS CONTRACT SHALL INCLUDE DISCONNECT AND ADD NEW SPRINKLER PIPING TO EXISTING WET SPRINKLER SYSTEM. ALL THE ABOVE CEILING EXISTING SPRINKLER SYSTEM SHALL REMAIN AND MAINTAINED DURING CONSTRUCTION.
3. PROVIDE ALL LABOUR, APPARATUS, ETC, FOR THE DISCONNECT AND ADD NEW CONNECTION OF SPRINKLER TO EXISTING SYSTEM.
4. MAINTAIN CONTINEOUS OPERATION OF EXISTING RISERS SO AS NOT TO INCONVENIENCE OTHER BUILDING TENANTS.
5. SPRINKLER CONTRACTOR SHALL VISIT THE PREMISES PRIOR TO SUBMITTING ITS PROPOSAL AND EXAMINE THE AREAS EFFECTED BY THIS WORK. HE IS TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND WITH POSSIBLE DIFFICULTIES THAT MAY ATTEND THE EXECUTION OF THIS WORK.
6. PERFORM THIS WORK SIMULTANEOUSLY WITH THAT OF OTHER TRADES SO AS NOT TO DELAY OVERALL PROGRESS OF WORK.
7. OWNER'S OCCUPANCY REGULATIONS MAY REQUIRE THAT CERTAIN PORTIONS OF WORK BE DONE AFTER REGULAR WORKING HOURS. COORDINATE WITH BUILDING MANAGEMENT. COST OF OVERTIME IS TO BE INCLUDED IN THE CONTRACTOR'S PROPOSAL.
8. REMOVE ALL DEMOLITION MATERIALS FROM PROJECT SITE, EXCEPT ITEMS DESIGNATED BY ARCHITECT/OWNER TO REMAIN OWNER'S PROPERTY AND BE STORED.
9. NO DEAD ENDS SHALL BE LEFT ON PIPING.
10. EXISTING EXPOSED PIPING NOT BEING REUSED, AND NOT SPECIFICALLY NOTED OR SHOWN ON DRAWING TO BE ABANDONED SHALL BE COMPLETELY REMOVED.
11. THE EXISTING SYSTEM SHALL BE LEFT IN PERFECT WORKING ORDER AT COMPLETION OF NEW WORK.
12. NO REMOVED EXISTING PIPING SHALL BE REUSED.
13. CONTRACTOR SHALL FIELD VERIFY EXACT ELEVATION, LOCATION AND PIPE SIZES OF EXISTING SPRINKLER HEADS AND PIPING BEFORE INSTALLATION OF NEW WORK.
14. ALL SPRINKLER WORK SHALL COMPLY WITH BUILDING STANDARDS AND REQUIREMENTS.
15. ALL SERVICE SHUTDOWNS SHALL BE BY BASE BUILDING ENGINEERS. MINIMUM OF 48 HOURS NOTICE IS REQUIRED TO THE BUILDING OFFICE PRIOR TO SHUT DOWN.
16. ALL WORK TO BE DONE DURING THE HOURS DESIGNATED BY OWNER.
17. CONTRACTORS SHALL TAKE SPECIAL CARE TO DEMOLISH ONLY THAT WORK WHICH IS REQUIRED TO BE DEMOLISHED AND NOT TO DISTURB ANY WORK WHICH IS TO REMAIN. IF IN THE COURSE OF THE DEMOLITION, THE CONTRACTOR DESTROYS OR DISTURBS ANY WORK WHICH IS TO REMAIN, THEN HE SHALL, AT HIS OWN EXPENSE, REPAIR OR REPLACE SUCH WORK AS NECESSARY.
18. EXISTING PIPING SERVING ADJACENT AREAS NOT IN AREA OF WORK SHALL REMAIN ACTIVE AND WITHOUT DISTURBANCE.
19. AFTER REMOVAL OF CEILINGS, CONSTRUCTION MANAGER SHALL INSPECT THE SITE WITH BUILDING REPRESENTATIVES TO IDENTIFY BASE BUILDING MEP INFRASTRUCTURE ITEMS WHICH ARE TO REMAIN. ALL SUCH ITEMS ARE TO BE CLEARLY TAGGED "TO REMAIN" AND TO BE PROTECTED DURING DEMOLITION, IN A MANNER SATISFACTORY TO BUILDING MANAGEMENT.

BUILDING DEPARTMENT SPRINKLER NOTES

1. THE INSTALLATION, COMPONENTS, SIZING, SPACING, CLEARANCES, POSITION AND TYPE OF SYSTEMS SHALL CONFORM TO MISSOURI BUILDING CODE 2018, CHAPTER 9, MISSOURI FIRE SPRINKLER CODE 2016 AND NFPA 13–2016.
2. ONLY APPROVED MATERIALS SHALL BE USED AS PER CHAPTER 9 OF 2018 MISSOURI BUILDING CODE AND NFPA–13.
3. DIRECT CONNECTION OF SPRINKLERS TO THE PUBLIC WATER SYSTEM SHALL CONFORM TO SECTION 903.3.5 OF MISSOURI BUILDING CODE 2018.
4. SPRINKLER SHALL BE PROTECTED AGAINST FREEZING AND INJURY AS PER 2018 MISSOURI BUILDING CODE AND NFPA–13 2016.
5. INSPECTION AND TESTS OF SPRINKLERS SHALL BE CONDUCTED AS PER 2016 MISSOURI FIRE SPRINKLER CODE AND 2018 MISSOURIV BUILDING CODE.
6. THE OCCUPANCY OF THE AREAS TO BE SPRINKLERED IN ACCORDANCE WITH SECTION 903 OF 2018 MISSOURI BUILDING CODE AND NFPA–13 2016.
7. WATER SUPPLY TEST PIPES AND GAUGES SHALL BE PROVIDED AS PER 2018 MISSOURI BUILDING CODE.
8. PIPING, FITTINGS, SPECIFICATIONS, PIPE SCHEDULES, SYSTEM TEST PIPES, PROTECTION AGAINST CORROSION, DAMAGE, VALVES, HANGERS, SPRINKLERS GUARDS AND SHIELDS SHALL BE AS PER AS PER 2018 MISSOURI BUILDING CODE AND 2016 MISSOURI FIRE SPRINKLER CODE.
9. SPRINKLER ALARM SHALL BE IN ACCORDANCE WITH SECTION 903.4 OF 2018 MISSOURI BUILDING CODE.
10. SPACING, LOCATION AND POSITION OF SPRINKLER WILL BE AS PER CHAPTER 9 OF 2018 MISSOURI BUILDING CODE AND NFPA 13–2016.
11. ALL BLIND SPACES EXCEEDING 6" IN WIDTH OR DEPTH WHICH CONTAIN COMBUSTIBLE MATERIAL WILL BE SPRINKLERED.
12. ALL PIPE PASSING THROUGH WALLS WILL COMPLY WITH 2018 MISSOURI BUILDING CODE.
14. DISTANCE OF SPRINKLERS FROM HEAT SOURCE SHALL BE IN AS PER TABLES 8.3.2.5 (A) AS PER NFPA 13–2016.
15. PROVIDE DEPARTMENT OF WATER SUPPLY LETTER WITH FLOW TEST DATE IF THERE IS A DIRECT CONNECTION TO THE STREET WATER SUPPLY AS PER NFPA–13 2016.
16. THIS APPLICATION IS NOT FILED AS A RESULT OF ACTION BY THE FIRE COMMISSIONER AS AUTHORIZED BY BS & A TO MODIFY THE CERTIFICATE OF OCCUPANCY NOR IS SUCH ACTION PENDING.
17. ALL VALVES SHALL BE IDENTIFIED AS REQUIRED BY SECTION 6.6.4 OF NFPA–13 2016.
18. DRAINAGE SHALL CONFORM TO SECTION MENTIONED IN 2018 MISSOURI BUILDING CODE.
19. A ONE PIECE REDUCING FITTING OF GOOD DESIGN SHOULD BE USED WHEREVER A CHANGE IS MADE IN THE SIZE OF PIPE, AS PER SECTION 6.4.7.1 OF NFPA–13 2016.
20. ALL VALVES ON CONNECTIONS TO WATER SUPPLIES TO SPRINKLER SHALL BE APPROVED O.S. & Y. OR APPROVED INDICATOR TYPE.
21. DRAIN VALVES AND TEST VALVES SHALL BE APPROVED TYPE AS PER SECTION 6.6.3 OF NFPA–13 2016.
22. HANGERS SHOULD BE SUPPORTED BY WROUGHT IRON U TYPE OR APPROVED ADJUSTABLE HANGERS. HANGERS SHALL BE OF THE TYPE APPROVED FOR USE WITH THE PIPE OR TUBE INVOLVED, AS PER NFPA–13 2016 AND 2018 MISSOURI BUILDING CODE.
23. PROVISIONS SHOULD BE MADE TO FACILITATE FLUSHING SYSTEM PIPING BY PROVIDING FLUSHING CONNECTIONS CONSISTING OF A CAPPED NIPPLE 4" LONG ON END OF A CROSS MAIN AS PER SECTION 8.16.3 OF NFPA–13 2016.
24. SPRINKLER SHALL BE AN APPROVED TYPE AS PER NFPA–13 2016.
25. TEMPERATURE RATING SHALL COMPLY WITH SECTION 8.3.2 OF NFPA–13 2016.
26. 18" MINIMUM CLEARANCE TO BELOW SPRINKLER DEFLECTOR AS PER SECTION 8.5.6 OF NFPA–13 2016.
27. SPACING AND LOCATION OF SPRINKLERS SHALL COMPLY WITH SECTION 8.5.3 OF NFPA–13 2016.
28. SPRINKLER SYSTEM COMPLIES WITH NFPA 13–2016.
29. SOURCES OF WATER SUPPLY FOR SPRINKLER SYSTEMS AS PER CHAPTER 9 OF MISSOURI BUILDING CODE 2018.
30. PIPE SCHEDULE SYSTEMS SHALL BE IN ACCORDANCE WITH SECTION 23.7 OF NFPA–13 2016.
31. HYDRAULICALLY DESIGNED SYSTEMS SHALL BE IN ACCORDANCE WITH SECTION 23.3 AND 23.4 OF NFPA–13 2016.
32. MINIMUM BRANCH PIPE SIZE TO BE ONE INCH (1").
33. THIS APPLICATION IS MADE ONLY FOR WORK INDICATED ON THE SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
34. PAINTING FOR DEDICATED SPRINKLER PIPING AND VALVES HANDLES SHOULD BE AS PER NFPA–13 2016.

SPRINKLER DRAWING LIST

01	FP001	FIRE PROTECTION SYMBOLS, ABBREVIATIONS, NOTES & SCHEDULES
02	FP100	1ST FLOOR FIRE PROTECTION PLAN
03	FP200	SPRINKLER DETAILS

SPACING BETWEEN SPRINKLER HEADS

LIGHT HAZARD: 15' MAX.

NOTE: MAXIMUM DISTANCE BETWEEN SPRINKLER HEADS & WALLS IS ½ THE DISTANCE BETWEEN HEADS.

SCOPE OF WORK

MODIFICATION OF EXISTING SPRINKLER SYSTEM AS PER THE NEW ARCHITECTURAL LAYOUT.

LIGHT HAZARD PIPE SCHEDULE - STEEL

# OF SPR. HDS	PIPE SIZE
1 – 2	1"
3	1¼"
4 – 5	1½"
6 – 10	2"
11 – 30	2½"
31 – 60	3"

NOTES:

1. PIPE SIZES SHOWN ARE FOR BRANCH PIPING ONLY.
2. REFER TO FLOOR PLANS FOR SIZES OF FEED MAIN, VALVE ASSEMBLY AND CROSS MAIN PIPING.
3. PROVIDE SPRINKLER HEADS ABOVE AND BELOW ALL DUCTS OR CLUSTERS OF DUCTS, PIPES AND/OR CONDUITS OVER 48" WIDE.

SPRINKLER LEGENDS

—— EX.SP ——	EXISTING SPRINKLER PIPING TO REMAIN
━━━━	NEW SPRINKLER PIPING
●	NEW CONCEALED SPRINKLER HEAD
◒	NEW PENDENT SPRINKLER HEAD
⊙	EXISTING UPRIGHT SPRINKLER HEAD
◕	SPRINKLER PIPING POINT OF CONNECTION
⊏——	SPRINKLER CAPPED OUTLET

DESIGN CRITERIA SUMMARY

HYDRAULIC CALCULATIONS BASED ON THE FOLLOWING:

OCCUPANCY:	LIGHT HAZARD
MINIMUM DESIGN DENSITY:	0.10 GPM/SQ. FT.

PROTECTION AREA OF SPRINKLER HEADS:

LIGHT HAZARD:	MAX. 225 SQ.FT. / PER SPRINKLER

SPRINKLER SCHEDULE

SYMBOL	NAME	COVERAGE	RESPONSE	AREA	METAL	TEMPERATURE (°F)	K–FACTOR	NPT	MFG	MODEL#	APPROVALS
●	CONCEALED	STANDARD	QUICK RESPONSE	LH/OH AREAS WITH CEILING	BRASS	155	5.6	½"	TYCO	SERIES RF–II TY3531	UL
⊙	UPRIGHT	STANDARD	QUICK RESPONSE	LH/OH AREAS WITH CEILING	BRASS	135	5.6	½"	TYCO	SERIES TY–FRB TY3131	UL
◒	PENDENT	STANDARD	QUICK RESPONSE	LH/OH AREAS WITH CEILING	BRASS	135	5.6	½"	TYCO	SERIES TY–FRB TY1231	UL

NOTE:
1. COORDINATE ALL SPRINKLERS AND ESCUTCHEON PLATE COLOR FINISHES WITH ARCHITECT.
2. PROVIDE TYCO STYLE 401 TWO–PIECE DEEP ESCUTCHEON PLATE FOR ALL PENDENT SPRINKLERS. COORIDINATE WITH ARCHITECT FOR COLOR FINISH.

SPRINKLER SPECIFICATIONS:

PART 1 – GENERAL

1.01 REQUIREMENTS

A. THE SPRINKLER CONTRACTOR SHALL BE A LICENSED, AUTHORIZED INSTALLER OF SPRINKLER SYSTEMS AND SHALL HAVE HAD A MINIMUM OF FIVE YEARS EXPERIENCE IN THE INSTALLATION OF SPRINKLER SYSTEMS IN THE CITY OF ELLISVILLE, MISSOURI.

B. BEFORE SUBMITTING HIS BID, THE SPRINKLER CONTRACTOR SHALL VISIT THE SITE AND SHALL FULLY FAMILIARIZE HIMSELF WITH, AND BECOME FAMILIAR WITH THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. CONTRACTOR SHALL PERFORM THIS PRIOR TO SUBMITTING HIS PROPOSAL. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.

C. UPON REVIEW OF THE DRAWINGS AND SPECIFICATIONS, PRIOR TO SUBMITTING HIS PROPOSAL, THE SPRINKLER CONTRACTOR SHALL INFORM ARCHITECT AND/OR ENGINEER OF ANY DISCREPANCIES OR REQUEST CLARIFICATION IN WRITING, IF NECESSARY, CONCERNING THE INTENT OF THE PLANS AND SPECIFICATIONS TO PROVIDE A COMPLETE SPRINKLER SYSTEM INSTALLATION. LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OF MATERIALS SHOULD SUCH PROCEDURE NOT BE FOLLOWED.

D. THE SCHEDULING OF THE SPRINKLER WORK SHALL BE COORDINATED WITH BUILDING MANAGEMENT, WITH OTHER CONTRACTORS AND WITH THE ENGINEER.

E. NECESSARY SHUT–DOWNS OF BASE BUILDING SPRINKLER SYSTEM MUST BE COORDINATED WITH BUILDING MANAGEMENT. SHUT–DOWNS OF BASE BUILDING SYSTEMS SHALL TAKE PLACE AFTER OR BEFORE NORMAL BUSINESS HOURS AND SHALL BE CONSIDERED OVERTIME WORK. THE CONTRACTOR MUST GIVE BUILDING MANAGEMENT AND NORTH CAROLINA FIRE DEPARTMENT 48 HOURS NOTICE PRIOR TO SHUT–DOWN OF SPRINKLER, OR OTHER SYSTEMS.

1.02 WORK INCLUDED

A. WORK SHALL INCLUDE ALL SPRINKLER WORK FURNISHED AND INSTALLED AS INDICATED ON THE PLANS AND AS SPECIFIED HEREIN.
   1. ALL WORK SHALL COMPLY WITH REQUIREMENTS OF THE MISSOURI BUILDING CODE, N.F.P.A. STANDARD 13, MISSOURI FIRE DEPARTMENT AND OWNERS INSURANCE RATING ORGANIZATION.
   2. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED. ANY DIMENSIONS NOT SHOWN SHALL BE OBTAINED FROM FIELD MEASUREMENTS.
   3. PROVIDE COMPUTER GENERATED HYDRAULIC CALCULATIONS IN ACCORDANCE WITH MISSOURI BUILDING DEPARTMENT AND NFPA –13 STANDARDS.

1.03 SHOP DRAWINGS AND SUBMITTALS

A. THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL, FULLY COORDINATED SHOP DRAWINGS, CAPACITY, DATA, AND CATALOG CUTS OF THE FOLLOWING:
   1. PIPE AND FITTINGS
   2. VALVES
   3. HANGERS AND SUPPORTS
   4. SPRINKLER PIPING LAYOUT
   5. TESTS
   6. SPRINKLER HEADS
   7. HYDRAULIC CALCULATIONS

B. THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED. CONTRACTOR SHALL SUBMIT CALCULATIONS WITH SHOP DRAWINGS. CALCULATIONS SHALL BE PERFORMED IN ACCORDANCE WITH REQUIREMENTS OF NFPA #13, AND MISSOURI BUILDING CODE.

1.04 BUILDING DEPARTMENT FILING, PERMITS AND CERTIFICATES

A. THE SPRINKLER CONTRACTOR SHALL FILE ALL REQUIRED DRAWINGS AND HYDRAULIC CALCULATIONS WITH THE BUILDING DEPARTMENT AND BE RESPONSIBLE FOR OBTAINING FINAL APPROVAL.

B. ARRANGE FOR INSPECTION AND TESTS OF ANY AND ALL PARTS OF THE WORK AS REQUIRED BY AUTHORITIES HAVING JURISDICTION AND PAY ALL CHARGES FOR SAME.

1.05 INSPECTION AND TESTING

A. THE SPRINKLER SYSTEM SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE MISSOURI BUILDING CODE FIRE DEPARTMENT INSPECTOR.

B. THE SPRINKLER SYSTEM SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST FOR A PERIOD OF TWO HOURS AT A PRESSURE OF AT LEAST 200 PSIG OR 50 PSI IN EXCESS OF THE MAXIMUM PRESSURE TO BE MAINTAINED WHEN THE MAXIMUM PRESSURE IN THE SYSTEM IS IN EXCESS OF 150 PSI AS PER NFPA 13.

C. THE BUILDING DEPARTMENT SHALL BE NOTIFIED THAT THE SYSTEM IS READY FOR REINSPECTION AND TESTING. THE BUILDING DEPARTMENT INSPECTOR SHALL WITNESS THE TEST. FINAL APPROVAL OF THE SPRINKLER SYSTEM SHALL BE OBTAINED FROM BUILDING DEPARTMENT, AND FIRE DEPARTMENT.

PART 2 – MATERIALS

2.01 GENERAL

A. THE SPRINKLER SYSTEM SHALL BE COMPLETE WITH ALL PIPE, FITTINGS, VALVES, DRAINAGE SYSTEM AND VALVES, HANGERS AND SUPPORTS. ALSO, MISCELLANEOUS WORK ITEMS, SUCH AS, SIGNS AS REQUIRED, VALVE TAGS, ETC., AND ALL OTHER RELATED EQUIPMENT, APPARATUS AND MATERIAL ITEMS NECESSARY FOR COMPLETE, APPROVED TYPE SYSTEM, READY FOR FUTURE EXTENSION.

B. ALL PIPE, FITTINGS, HANGERS, SUPPORTS, SPRINKLER HEADS, ETC., SHALL CONFORM TO THE NORTH CAROLINA BUILDING CODE AND NATIONAL FIRE PROTECTION ASSOCIATION'S REQUIREMENTS AS TO TYPES OF MATERIALS, ARRANGEMENT, SIZES AND INSTALLATION. PIPING PENETRATING FIRE RATED PARTITIONS SHALL HAVE OPENING SEALED WITH U.L. APPROVED FIREPROOF SEALANT.

2.02 SPRINKLER PIPING

A. ALL SPRINKLER PIPING SHALL BE SCHEDULE 40, IN ACCORDANCE WITH NFPA 13. PIPE SHALL BE UL/FM APPROVED.

B. STEEL PIPE SHALL BE BETHLEHEM STEEL CO., ALLIED TUBE, BERGER INDUSTRIES OR APPROVED.

C. AS PER NFPA 13–2016 , PIPE OR TUBE USED IN SPRINKLER SYSTEMS SHALL BE OF THE MATERIALS SPECIFIED IN TABLE 6.3.1.1.

D. AS PER NFPA 13, FITTINGS USED IN SPRINKLER SYSTEMS SHALL BE OF THE MATERIALS LISTED IN TABLE 6.4.1. FITTING SHALL BE UL/FM APPROVED.

2.03 CUTTING AND PATCHING

DO ALL CUTTING AND CORE DRILLING NECESSARY FOR THE INSTALLATION OF SPRINKLER WORK. ACCURATELY LAYOUT WORK FOR WHICH CUTTING IS REQUIRED. PATCH AND RESTORE ANY DAMAGE WORK TO LIKE NEW CONDITION.

2.04 CUTTING AND PATCHING

1. DO ALL CUTTING AND CORE DRILLING NECESSARY FOR THE INSTALLATION OF SPRINKLER WORK. ACCURATELY LAYOUT WORK FOR WHICH CUTTING IS REQUIRED. PATCH AND RESTORE ANY DAMAGE WORK TO LIKE NEW CONDITION.
2. FOR REPLACEMENT OF THE WORK REMOVED, MATCH EXISTING IN NATURE, CONSTRUCTION AND FINISH.
3. MAINTAIN THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIAL OR RUBBISH COVERED BY THE WORK, REMOVE ALL SURPLUS MATERIALS, TOOLS ETC. AND LEAVE PREMISES CLEAN.

2.05 FIRE STOPPING

INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURERS PUBLISHED DIRECTIONS AND PER FIRE TESTED DESIGNS THAT HAVE BEEN ACCEPTED BY THE APPROPRIATE CODE AUTHORITY HAVING JURISDICTION.

2.06 PHASING

PHASING SHALL BE COORDINATED BETWEEN THE SPRINKLER CONTRACTOR AND GENERAL CONTRACTOR. SPRINKLER INSTALLATION SHALL BE PHASED IN A MANNER WHICH WILL ALLOW FULL OCCUPANCY OF THE EXISTING FACILITY WHILE THE INSTALLATION IS IN PROGRESS.

2.07 ALTERNATES/SUBSTITUTIONS

CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY CONTRACTOR PROPOSED SUBSTITUTIONS OF THE MATERIALS OR METHODS OF INSTALLATION FROM THAT SPECIFIED. THESE ALTERATIONS SHALL BE LISTED ON THE PROPOSAL AS CONTRACTOR ALTERNATIVE.

2.08 LEAK DAMAGE

THE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE DURING THE INSTALLATION AND TESTING PERIODS OF THE SPRINKLER SYSTEM FOR ANY LOSS OR DAMAGE TO THE WORK OF OTHERS, TO THE BUILDING, IT'S CONTENTS ETC. CAUSED BY LEAKS IN THE EQUIPMENT. BY UNPLUGGED OR DISCONNECTED PIPES, FITTINGS ETC. OR BY OVERFLOW, AND SHALL PAY FOR THE NECESSARY REPLACEMENTS OR REPAIRS TO THE WORK OF OTHERS, DAMAGED BY SUCH LEAKAGE.

2.09 INSERTS, HANGERS, ETC.

A. ALL SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED AND SHALL COMPLY WITH THE STANDARDS FOR THE NATIONAL FIRE PROTECTION ASSOCIATION FOR THE INSTALLATION OF SPRINKLER SYSTEMS AND AS REQUIRED BY THE MISSOURI BUILDING CODE.

B. HANGERS AND THEIR COMPONENTS SHALL BE FERROUS. HANGERS SHALL BE ADJUSTABLE FLAT IRON TYPE OF CLEVIS TYPE.

C. SPRINKLER PIPING OR HANGERS SHALL NOT BE USED TO SUPPORT NON–SYSTEM COMPONENTS.

D. SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE WHICH MUST SUPPORT THE ADDED LOAD OF THE WATER–FILLED PIPE PLUS A MINIMUM OF 250 LBS. APPLIED AT THE POINT OF HANGING. CONTRACTOR SHALL SUBMIT DETAIL OF SUPPORT FOR REVIEW AND APPROVAL.

E. SPRINKLER PIPING SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING SHEATHING.

F. WHEN SPRINKLER PIPING IS INSTALLED BELOW DUCTWORK, PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE, NOT FROM THE DUCTWORK.

G. MAXIMUM DISTANCE BETWEEN HANGERS SHALL NOT EXCEED 12 FT. FOR 1 AND 1–1/4" SIZES NOR 15' FOR SIZES 1–1/2" AND LARGER.

H. EXPANSION SHIELDS FOR SUPPORTING PIPES UNDER CONCRETE CONSTRUCTION MAYBE USED IN A HORIZONTAL POSITION IN THE SIDES OF BEAMS. IN CONCRETE HAVING GRAVEL OR CRUSHED STONE AGGREGATE, EXPANSION SHIELDS MAY BE USED IN THE VERTICAL POSITION TO SUPPORT PIPES 4" OR LESS IN DIAMETER.

2.09 ESCUTCHEONS

PROVIDE ESCUTCHEONS ON ALL EXPOSED PIPING PASSING THROUGH WALLS, PARTITIONS, FLOORS AND CEILINGS. ESCUTCHEON SHALL BE HELD IN PLACE BY INTERNAL TENSION OR SET SCREW.

2.10 AS–BUILT DRAWINGS

PREPARE AND SUBMIT "AS BUILT" DRAWINGS AT THE COMPLETION OF THE PROJECT.

2.11 SPRINKLER HEADS

A. SPRINKLERS SHALL BE RATED FOR ORDINARY TEMPERATURES (135/155 DEG. F) EXCEPT AS REQUIRED NEAR HEATERS OR LOCATIONS WHERE ELEVATED TEMPERATURES MAY NORMALLY BE EXPECTED OR AS OTHERWISE INDICATED ON THE CONTRACT DRAWINGS.

B. SPRINKLER HEADS SHALL BE BY TYCO SPRINKLER CO., INC. MANUFACTURE OR APPROVED EQUAL, UL AND FM APPROVED, AS FOLLOWS:
   1. SPRINKLER HEADS IN FINISHED CEILINGS WITH CONCEALED PIPING SHALL BE AUTOMATIC TYCO MODEL TY 3531. AND IN BEAM SECTION TY 1231.
   2. SPRINKLER HEADS IN OPEN AREA SHALL BE AUTOMATIC TYCO MODEL TY 3131.
   3. PROVIDE SPARE SPRINKLER EMERGENCY CABINETS CONFORMING TO NFPA.
   4. SPRINKLER EMERGENCY CABINETS SHALL BE OF TYCO SPRINKLER CO., INC. OR APPROVED EQUAL, UL AND FM APPROVED.
   5. CABINET SHALL BE CONSTRUCTED OF 22 GAUGE STEEL WITH PRIME COAT AND MANUFACTURER'S BAKED ENAMEL FINISH IN COLOR SELECTED BY THE ARCHITECT.
   6. CABINET SHALL CONTAIN A MINIMUM OF 6 SPRINKLER HEADS OF EACH TYPE EMPLOYED.

2.12 PRESSURE GAUGE

A. ASHCROFT SERIES 1079, OR APPROVED OTHER, 4–1/2" DIAMETER, 0–200 P.S.I. RANGE, 20 P.S.I. INTERVALS.

PART 3 – EXECUTION

3.01 GUARANTEE

A. GUARANTEE FOR A PERIOD OF ONE (1) YEAR FORM THE DATE OF ACCEPTANCE BY THE OWNER, ALL MATERIALS, APPARATUS AND WORKMANSHIP WHETHER FURNISHED BY HIMSELF OR BY HIS SUBCONTRACTORS AND HE SHALL REPLACE OR REPAIR IN A MANNER APPROVED BY THE ARCHITECTS, WITHOUT COST TO THE OWNER, ANY PART OR PARTS OF THE WORK WHICH MAY PROVE DEFECTIVE OR UNSATISFACTORY WITH IN THE PERIOD OF THE GUARANTEE.

3.02 INSTALLATION

A. PIPING
   1. INSTALL PIPING AS SHOWN ON THE CONTRACT DRAWINGS AND STRAIGHT AND DIRECT AS POSSIBLE, FORMING RIGHT ANGLES OR PARALLEL LINES WITH BUILDING WALLS, NEATLY SPACED, WITH RISERS PLUMB AND TRUE.
   2. SPRINKLER PIPING SHALL BE INSTALLED SO THAT THE SYSTEM CAN BE DRAINED.
   3. PIPE SHALL BE REMOVED BY REAMING.
   4. BEFORE INSTALLING PIPE, THOROUGHLY CLEAN THE INSIDE FREE OF CUTTING AND FOREIGN MATTER. CUT ALL PIPE SQUARE AND SMOOTH AND MAKE UP ALL JOINTS TO REQUIRED LIMITS.

B. PIPE JOINTS
   1. THREADED JOINTS SHALL BE MADE UP OF TIGHT USING PIPE JOINT TEFLON COMPOUND OR TAPE, APPLIED ON THE MALE THREADS ONLY.

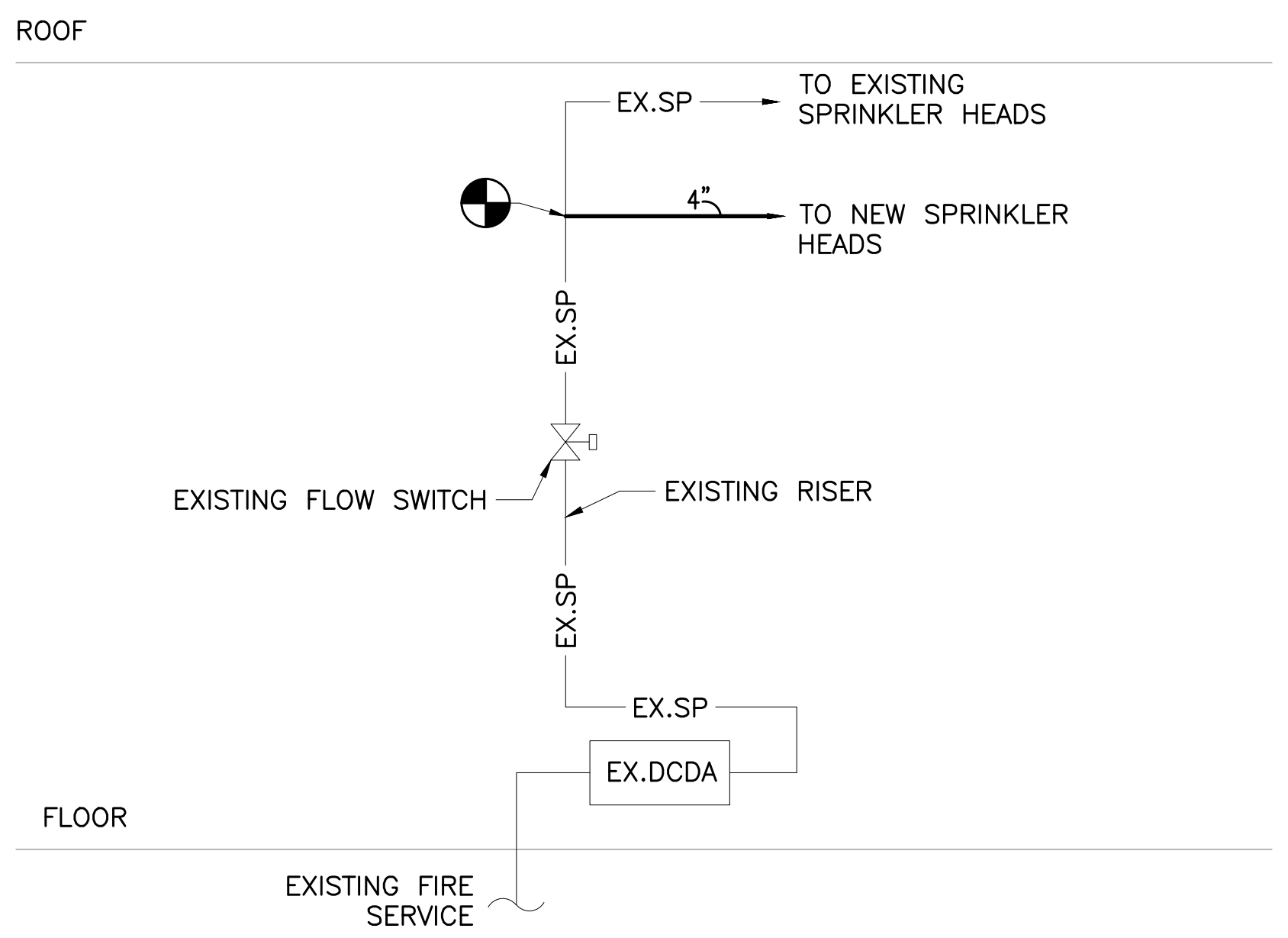
Issued / Revised

No. Date Description

WOODHOUSE™
SPA

**FIRE PROTECTION
SYMBOL, ABBREVIATION
NOTE AND SCHEDULE**

FP001



NOTE: CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND SIZE OF EXISTING RISER, SPRINKLER MAIN PIPING & FLOW SWITCH LOCATIONS.

② SPRINKLER RISER DIAGRAM

NTS

GENERAL NOTES:

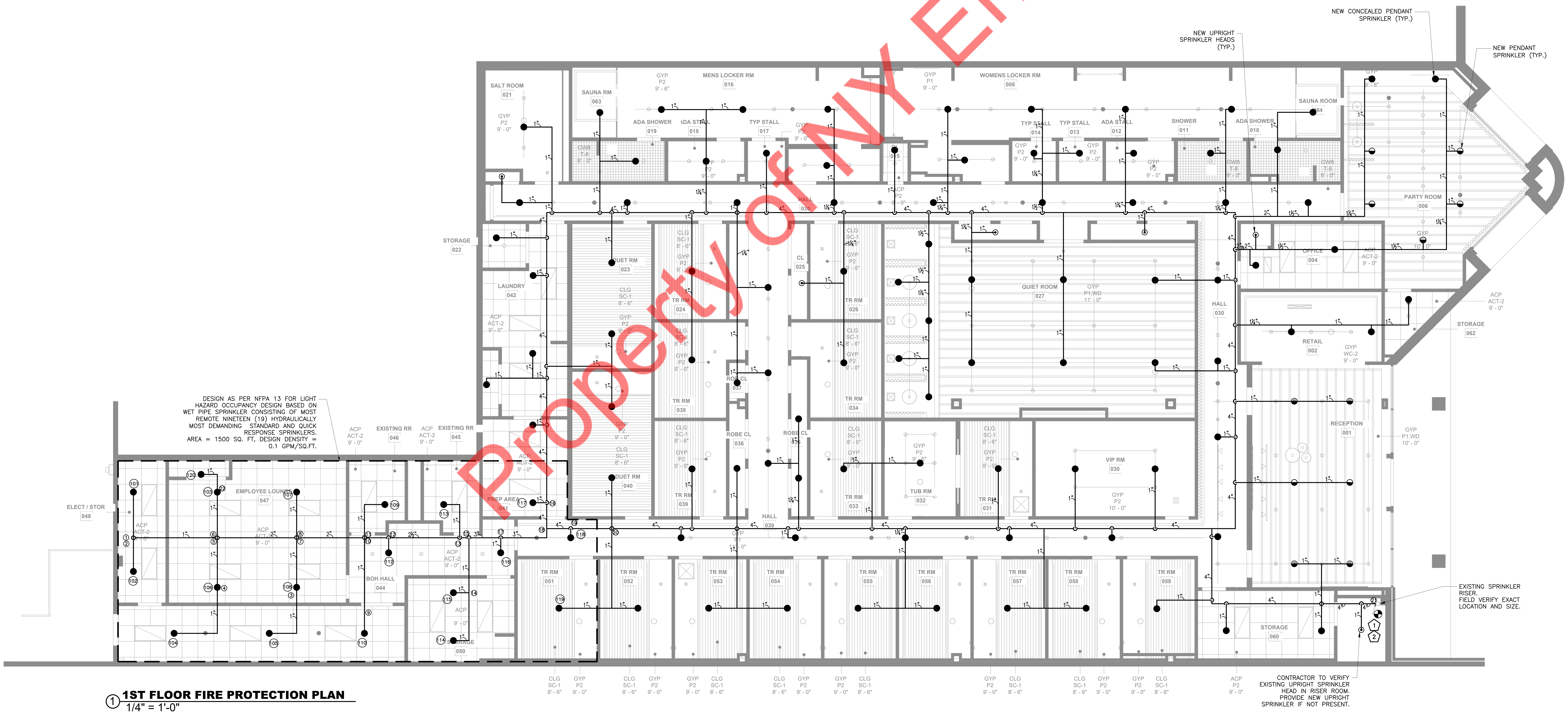
1. ALL NEW SPRINKLER HEADS LOCATION TO BE COORDINATED WITH LIGHTING AND DIFFUSERS TO AVOID CONFLICT.
2. ALL SPRINKLER HEADS & PIPING TO BE COORDINATED WITH EXISTING & NEW SERVICES.
3. ANY WORK SHOWN ON THE DRAWINGS AND NOT PARTICULARLY DESCRIBED IN THE SPECIFICATIONS OR DETAILS, OR ANY WORK WHICH MAY BE DEEMED NECESSARY TO COMPLETE THE CONTRACT SHALL BE PROVIDED BY THE CONTRACTOR AS PART OF THIS CONTRACT.
4. FOR PURPOSES OF CLEARNESS AND LEGIBILITY, SPRINKLER DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND SIZE AND LOCATION OF EQUIPMENT ARE DRAWN TO SCALE WHEREVER POSSIBLE. THE DRAWINGS INDICATE CONNECTION POINTS, AND ROUTED OF PIPES. IT IS NOT INTENDED, HOWEVER, THAT ALL OFFSETS, RISES AND DROPS ARE SHOWN. PROVIDE PIPING AS REQUIRED TO FIT STRUCTURE, AVOID OBSTRUCTIONS, AND RETAIN CLEARANCES, HEADROOM OPENINGS AND PASSAGEWAYS. ALL SPRINKLER PIPING AT CEILING SHALL BE COORDINATED WITH CEILING.
5. SPRINKLERS SPACING SHALL BE AS FOLLOWING –
    1. MAXIMUM 7.5' FROM WALL
    2. MAXIMUM DISTANCE BETWEEN 2 SPRINKLER HEADS IS 15'.
    3. MINIMUM DISTANCE BETWEEN 2 SPRINKLER HEADS IS 6'.
    4. COVERAGE AREA PER SPRINKLER SHALL BE MAX. 225 SQ.FT.
6. ABANDONED SPRINKLER PIPES ARE TO BE CAPPED AS REQUIRED BY CODE.
7. CONTRACTOR TO VERIFY IN FILED & REPLACE ALL DEFECTIVE SPRINKLER HEADS WITH NEW SPRINKLER HEADS. ALL EXISTING AND NEW PIPES TO BE THOROUGHLY CLEANED AS REQUIRED.
8. OWNER SHALL NOTIFY LOCAL FIRE DEPARTMENT FOR FIRE PROTECTION SYSTEM DISCONNECTION BY SUBMITTING A LETTER OF NOTIFICATION.
9. CONTRACTOR SHALL LEAVE NO DEAD ENDS TO CONCEALED OR EXPOSED PIPING WHEN REMOVING/ADDING SPRINKLER PIPING AND SPRINKLER HEADS.
10. ALL BRANCH TAKE–OFF FOR EACH SPRINKLER TO BE MIN. 1".
11. PROVIDE SPRINKLER HEADS BELOW ALL DUCTS OR CLUSTER OF DUCTS, PIPES AND /OR CONDUIT OVER 48" WIDE.
12. PROVIDE AUXILARY DRAIN FOR TRAPPED SECTION OF SPRINKLER PIPING.
13. CONTRACTOR TO COORDINATE WITH FINAL CEILING PLAN AND PROVIDE SPRINKLER HEAD ACCORDINGLY.

KEYNOTES:

1 CONNECT NEW SPRINKLER MAIN PIPING TO EXISTING SPRINKLER SYSTEM. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND SIZE OF EXISTING PIPE.

2 EXISTING SPRINKLER SYSTEM AT HIGH LEVEL TO REMAIN.

SPRINKLER COUNT	
NEW CONCEALED PENDENT SPRINKLER HEADS	112
NEW UPRIGHT SPRINKLER HEADS	06
NEW PENDENT SPRINKLER HEADS	11
TOTAL	129



NEW CONCEALED PENDANT SPRINKLER (TYP.)

NEW UPRIGHT SPRINKLER HEADS (TYP.)

NEW PENDANT SPRINKLER (TYP.)

DESIGN AS PER NFPA 13 FOR LIGHT HAZARD OCCUPANCY DESIGN BASED ON WET PIPE SPRINKLER CONSISTING OF MOST REMOTE NINETEEN (19) HYDRAULICALLY MOST DEMANDING STANDARD AND QUICK RESPONSE SPRINKLERS.
AREA = 1500 SQ. FT, DESIGN DENSITY = 0.1 GPM/SQ.FT.

EXISTING SPRINKLER RISER.
FIELD VERIFY EXACT LOCATION AND SIZE.

CONTRACTOR TO VERIFY EXISTING UPRIGHT SPRINKLER HEAD IN RISER ROOM. PROVIDE NEW UPRIGHT SPRINKLER IF NOT PRESENT.

① 1ST FLOOR FIRE PROTECTION PLAN

1/4" = 1'-0"

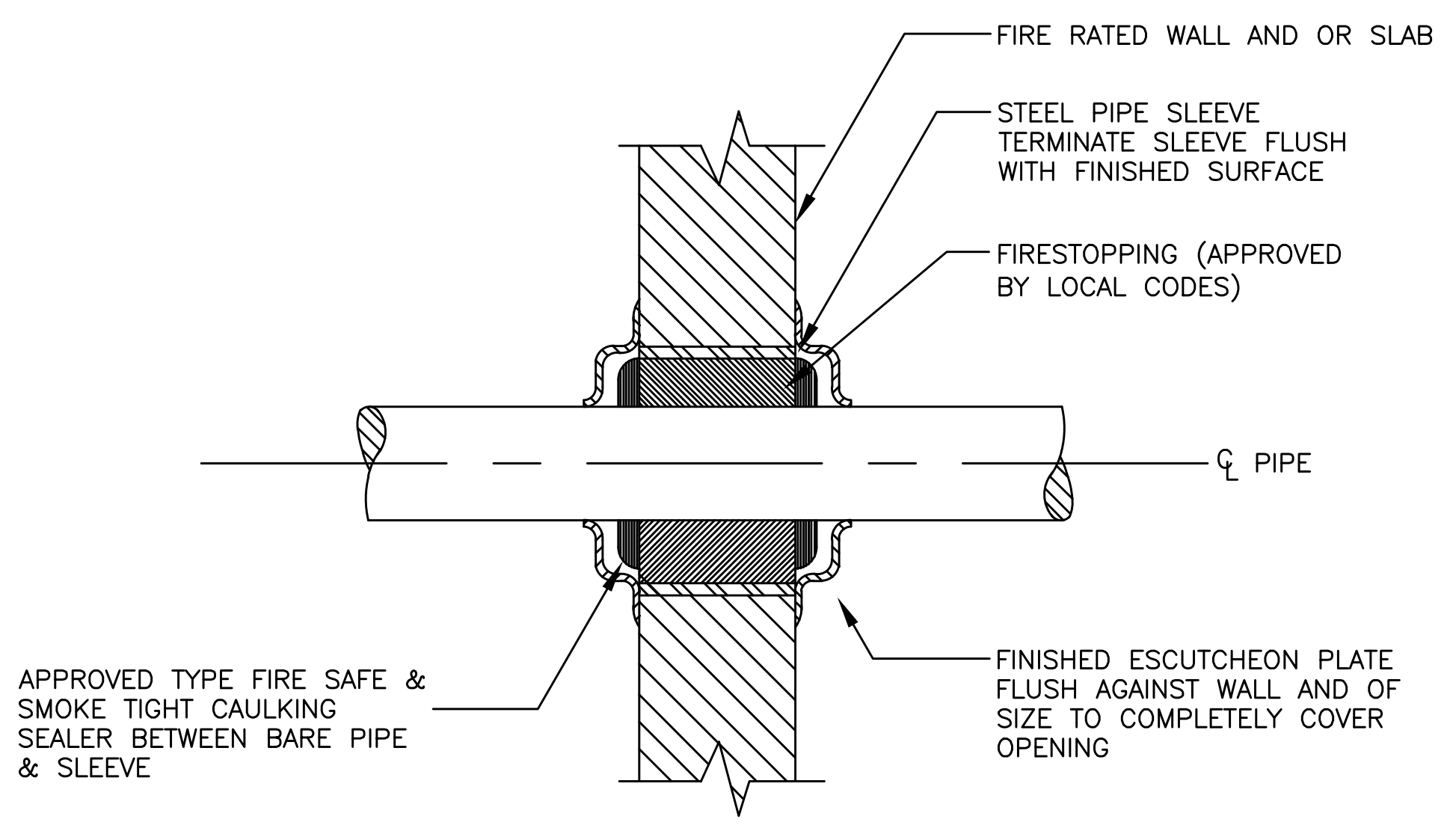
Issued / Revised

No.	Date	Description

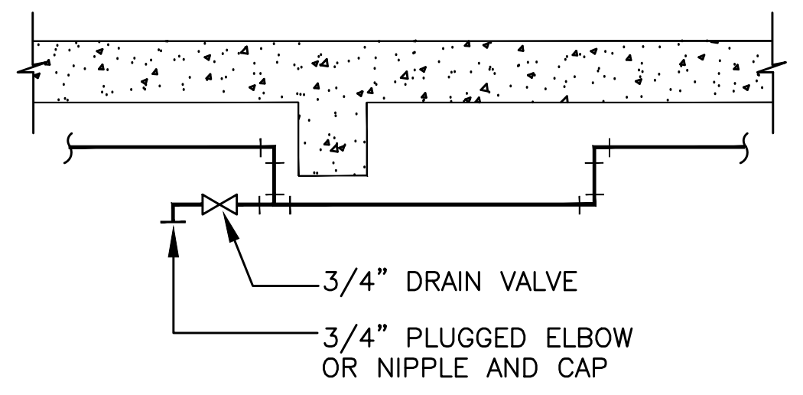
WOODHOUSE™
SPA

1ST FLOOR
FIRE PROTECTION PLAN

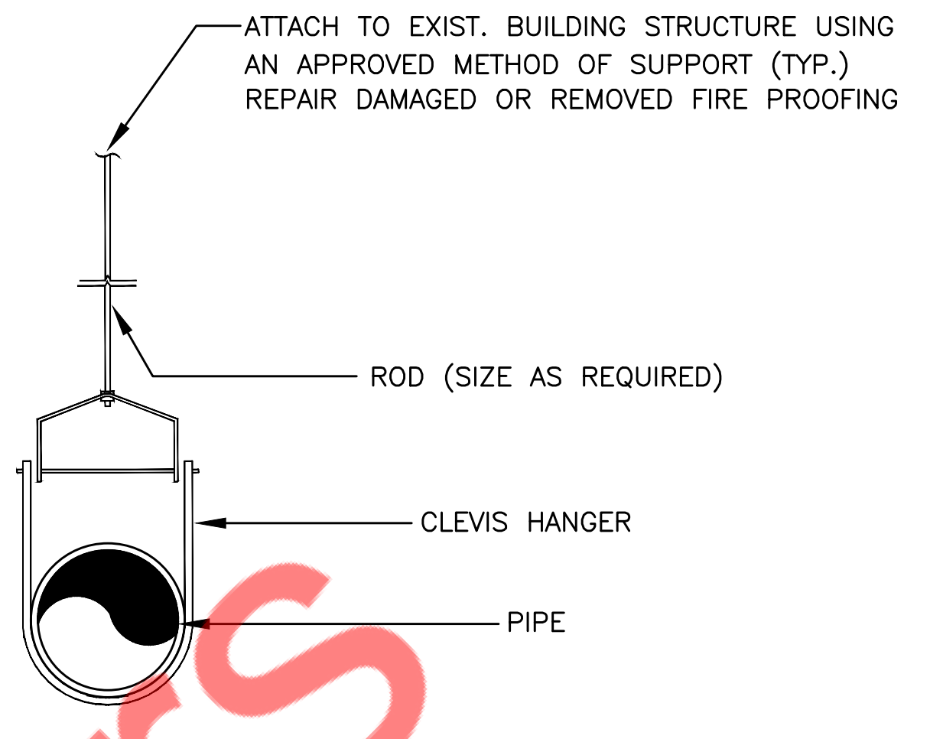
FP100



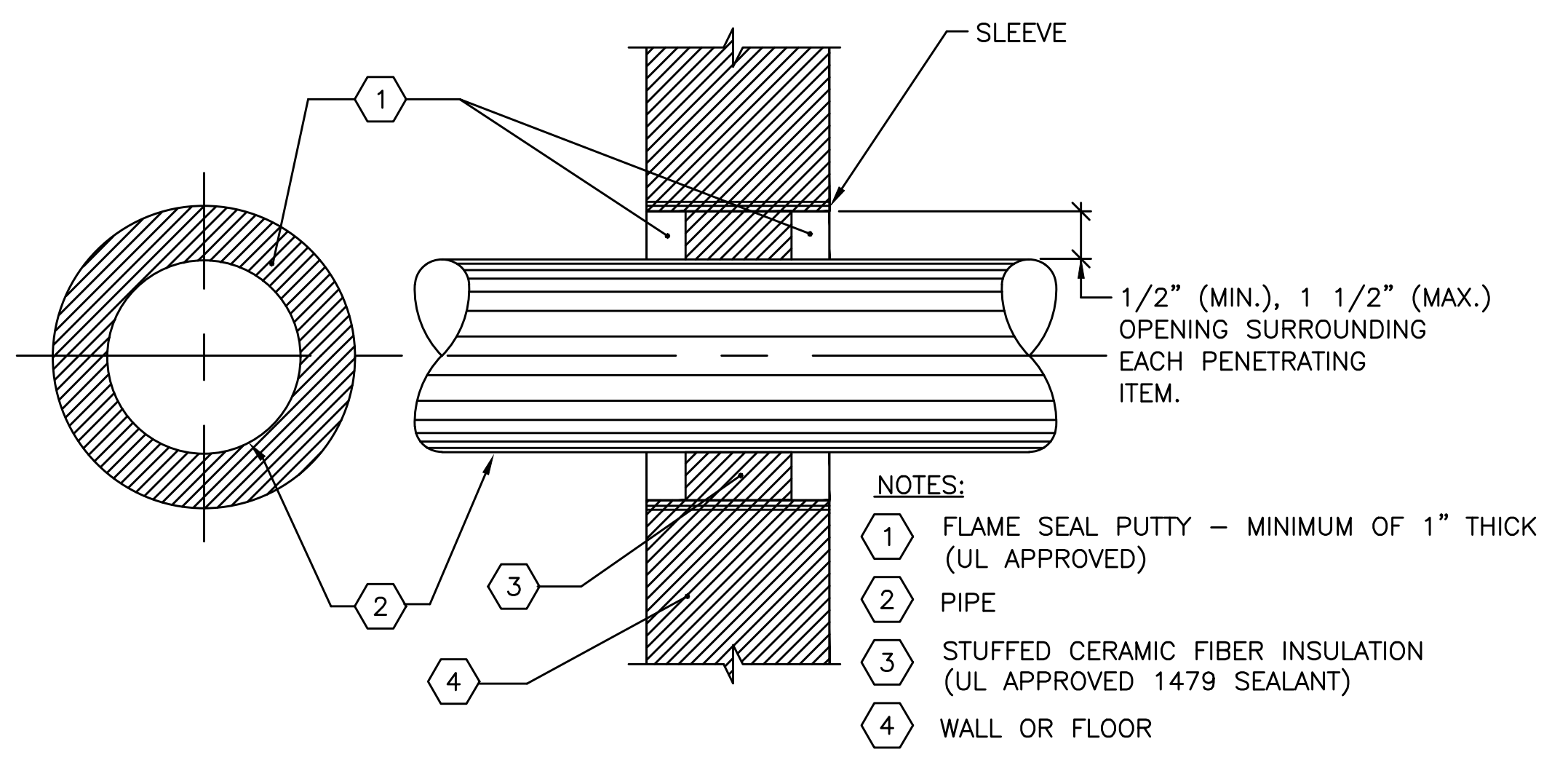
1
FP200
PIPE THRU RATED WALL TYPICAL DETAIL
N.T.S



2
FP200
TYPICAL DRAIN CONNECTION FOR TRAPPED LINES ON WET PIPE SPRINKLER SYSTEMS
N.T.S



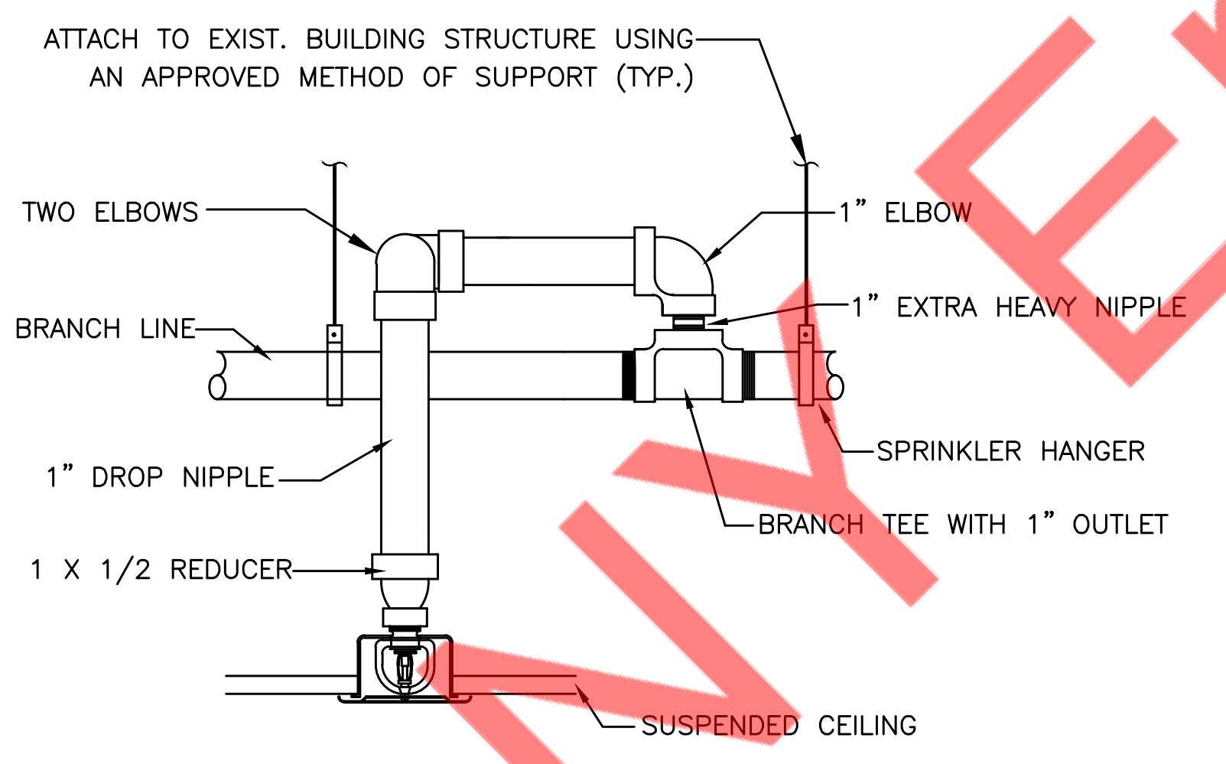
3
FP200
HANGER DETAILS TYPICAL
N.T.S



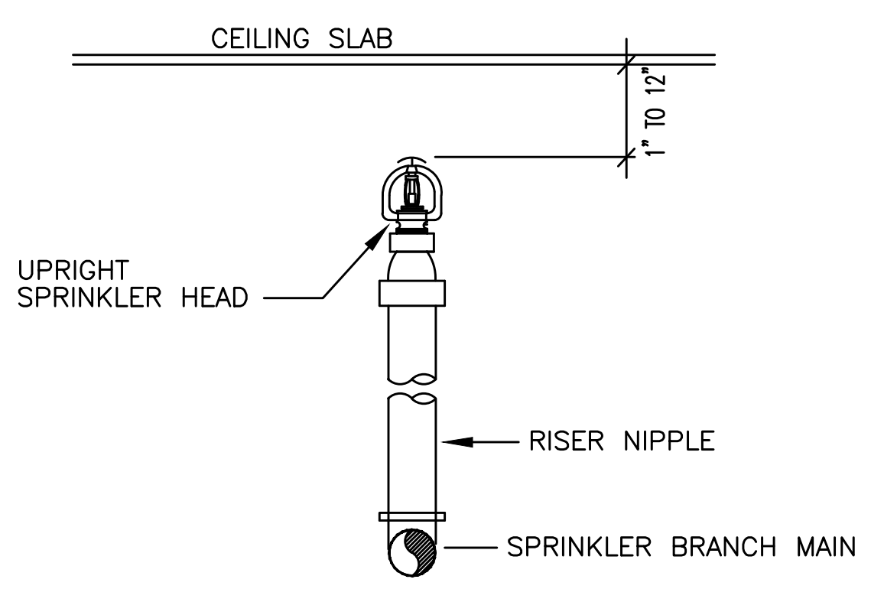
NOTES:

1. FLAME SEAL PUTTY – MINIMUM OF 1" THICK (UL APPROVED)
2. PIPE
3. STUFFED CERAMIC FIBER INSULATION (UL APPROVED 1479 SEALANT)
4. WALL OR FLOOR

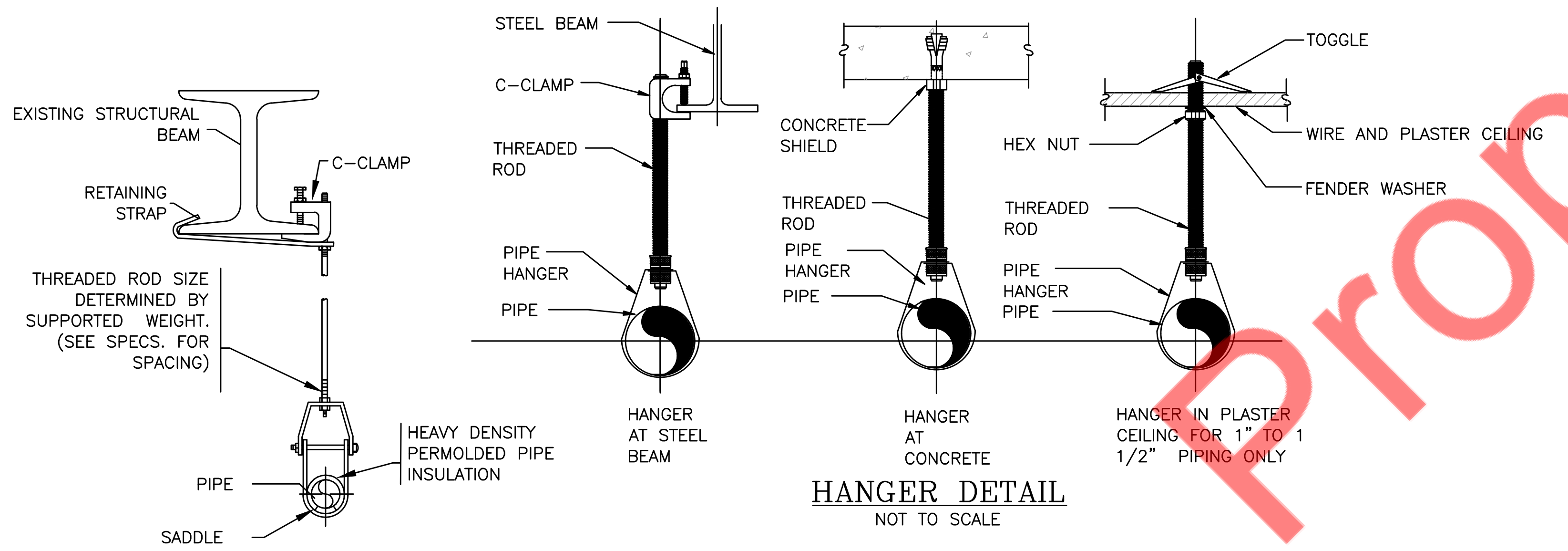
4
FP200
FIRE STOPPING DETAIL FOR FIRE/SMOKE RATED WALL/FLOOR OPENINGS
N.T.S



5
FP200
SPRINKLER HEAD IN SUSPENDED CEILING DETAIL
N.T.S



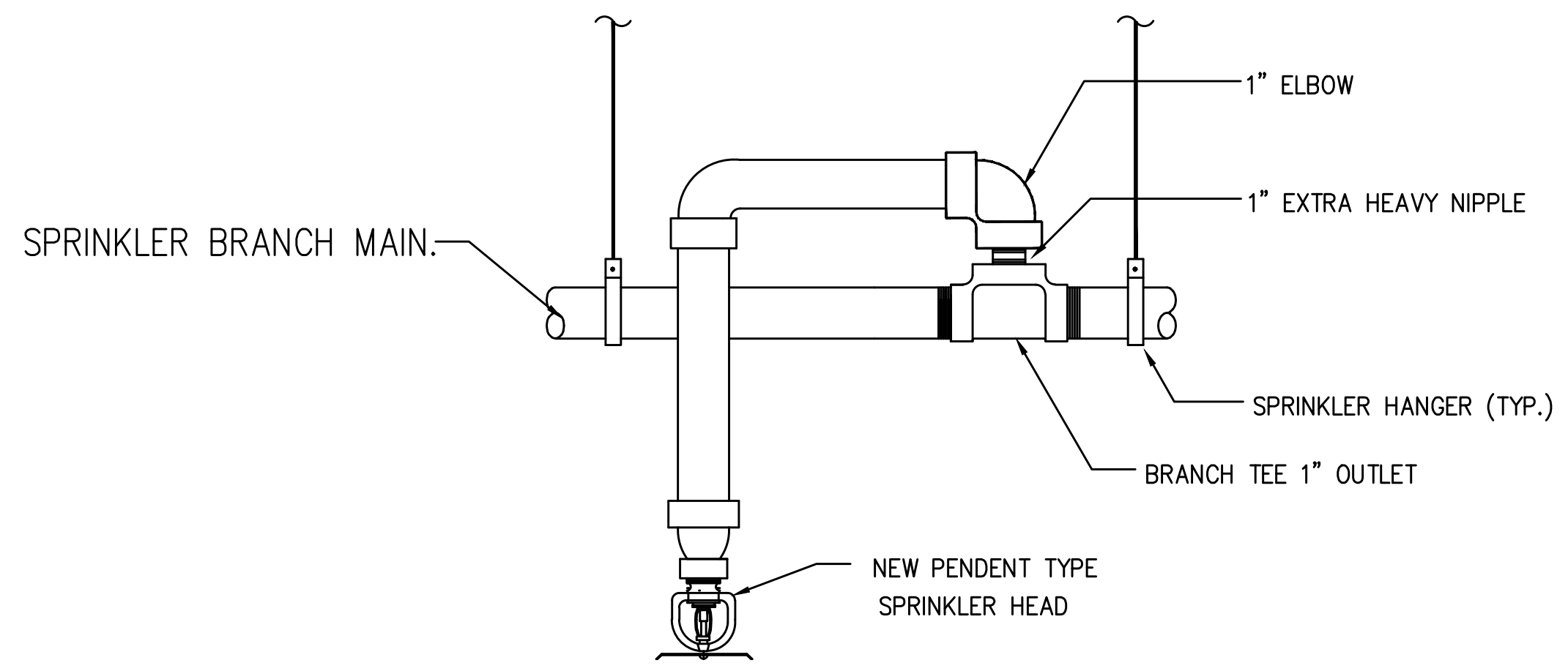
6
FP200
SPRINKLER HEAD DETAIL UPRIGHT
N.T.S



ROD SCHEDULE

PIPE SIZE	ROD SIZE	SPACING	PIPE SIZE	ROD SIZE	SPACING
1"	3/8"	5'–8'	2 1/2"	1/2"	10'–12'
1 1/4"	3/8"	6'–10'	3"	1/2"	10'–12'
1 1/2"	3/8"	8'–10'	4"	5/8"	12'–15'
2"	3/8"	10'–12'	6"	3/4"	12'–15'

7
FP200
TYPICAL HANGER DETAIL AND ROD SCHEDULE
N.T.S



8
FP200
PENDENT SPRINKLER HEAD DETAILS
N.T.S

Issued / Revised
No. Date Description

WOODHOUSE™
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SPRINKLER DETAILS

FP200